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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/614,095

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Seiichi Yamamoto

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11/28/2007

TAIYO CORPORATION

401 HOLLAND LANE

#407

ALEXANDRIA, VA 22314

EXAMINER

CHEA, THORL

ART UNIT

PAPER NUMBER

1795

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/614,095	Applicant(s) YAMAMOTO, SEIICHI	
	Examiner Thorl Chea	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 September 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 and 12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is responsive to the communication on September 14, 2007; claims 1-11, 12-20 are pending in this instant application; claims 13-20 are withdrawn as being drawn to non-elected invention; claims 11 has been canceled.
2. The filing of the Terminal Disclaimer on September 14, 2007 obviates the rejection of claims 1-10, 12 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 10, 14-20 are of copending Application No. 10/602,622 in view of EP 1096310A2 set forth in the office action on May 14, 2007. The rejection is withdrawn.
3. The rejection of claims 1-10, 12 rejected under 35 U.S.C. 102(e) as being anticipated by Oka et al (US 2004/0005552A1) is withdrawn in view of the applicant's argument and the statement of the common ownership provided in the response on September 14, 2007 .

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-4, 7-10, 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claiming of "90 % or more of a total iridium amount contained in the core portion" and "at least 50 % of the other metal is contained in the shell portion of the grain" in claim 1 and "90 % or more of a total iridium amount contained in the core portion" and "at least 70 % of the other metal is contained in the shell portion of the grain" is indefinite in the absence of providing the amount of the iridium and the other metal since "90 %", "50 %" or "70 %" is relative term, and

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the amount associated with the percentage cannot be determined in the absence of providing the total amount of iridium, and the metal selected from the group consisting of is iron, copper, rhodium and ruthenium. In this case the percentage of the iridium and the metal other than iridium is based on the "total amount" which is undefined, and therefore, the claims are indefinite.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-9 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Okada et al (US 6,120,983), Yanagisawa et al (US 2002/0028414A1) and EP 1096310A2 (EP'310).

Okada et al discloses a photothermographic material contains silver halide include silver halide core/shell structure having two to 5 layers and halide composition include silver bromide, silver iodobromide and silver iodide, and wherein the photosensitive silver halide grains contains at least one complex metal selected from the group consisting of rhodium, rhenium, ruthenium, osmium, iridium, cobalt and iron. The metal complexes may be used alone or in admixture of two or more complexes of common metal or different metals. The distribution of metal complex in the silver halide grains is not critical. The metal complex may be contained in the silver halide grains in uniform phase or at high concentration in either core or in the shell and the amount thereof is from 1×10^{-9} to 1×10^{-2} mole per mole of silver. See column 36, lines 3-35. See also the

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organic acid silver in columns 37-38 and reducing agent including bisphenols in column 39, lines 21-26; the chemical sensitization using the sulfur, selenium, tellurium and gold sensitizer in column 36, lines 40-67, and the silver halide grains having grain size of less than 0.20 micron in column 35, lines 38-50 (10 nm to 150 nm).

Yanagisawa et al on page 5, [0080] disclose to incorporate the metal ions or complex ions into silver halide grain through addition during the silver halide grain formation and most at the stage of nuclei formation and growth. EP'310 discloses the bisphenols reducing agent on page 3, [0013].

The present claimed invention is related to use the iridium with an amount of 90 % or more of the total amount of iridium in the core portion of the grain correspond to 50 % of the total mole % of silver halide in the grain and at least 50 % of a total amount of the metal selected from the group consisting of iron, copper, rhodium and ruthenium in the shell portion of the grain. Accordingly, the core contains 90 % of iridium and 50 % the metal selected from the group consisting of iron, copper, rhodium and ruthenium, and the shell contains 10 % of iridium and 50 % of metal selected from the group consisting of iron, copper, rhodium and ruthenium. Therefore, the silver core/shell grains claimed in the present invention contains high concentration of the metal in the core and low in the shell within the meaning taught in Okada et al which discloses the a silver halide core/shell grains which contains one or an admixture of two or more metal including the iridium, rhodium, ruthenium, and iron, and the distribution of the metal complex in the silver halide grain is not critical, which is the metal complex may be formed a uniform phase or at high concentration in either in the core or in a shell. Therefore, it would have been obvious to the worker of ordinary skill in the art at the time the invention was

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made to form a silver halide core/shell grains having high concentration of metal in the core including the iridium taught Okada et al with an expectation of success. See also Yanagisawa et al which incorporates the metal complex during the nuclei formation or during grain growth which would have understood in the art it is preferred to use the metal complex within the core of the silver halide grain. The bisphenols compound of formula (I) has been conventionally used as reducing agent for silver ion such as taught in EP'310, and it would have been obvious to the worker the bisphenols compound taught in EP'310 as reducing agent for silver ions of the material taught in Okada et al, and thereby provide a material as claimed.

8. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination Okada et al (US 6,120,983), Yanagisawa et al (US 2002/0028414A1) and EP 1096310A2 (EP'310) as applied to claims 1-9, 11-12 above, and further in view of Farid et al (US Patent No. 5,747,236). Farid et al disclose fragmentable electron donor to increase the sensitivity of silver halide emulsion. It would have been obvious to the worker of ordinary skill in the art at the time the invention was made to use fragmentable electron donor taught in Farid to increase the sensitivity of the material obtained by the combination of Okada et al (US 6,120,983), Yanagisawa et al (US 2002/0028414A1) and EP 1096310A2 (EP'310), and thereby provide a material as claimed.

Response to Arguments

9. Applicant's arguments filed on September 14, 2007 have been fully considered but they are not persuasive. The applicants argue that "The Examiner has further stated that Claims 1 and 2 are indefinite due to the absence of providing specific amounts of iridium and the other metals. Applicant respectfully disagrees. The

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characteristic feature of the present invention is that Ir metal is primarily contained in the core rather than the shell, and specified metals other than Ir are primarily contained in the shell rather than the core. Therefore, the amounts of the metals should be recited as relative Values."

The Examiner does not agree with the applicants. The total amount of the iridium and the amount of the total amount of the metal selected from the group consisting of iron, copper, rhodium and ruthenium are not provided. Therefore, the percentage as claimed is indefinite due to lacking of the base amount thereof. "Relative terms must have some basis for comparison. In re Self 213 USPQ 1, 7 (CCPA 1982); In re Miles 175 USPQ 33 (CCPA 1972)." Since the total amount of the iridium and the total amount of metal other than iridium are unspecified, the percentage of that total amount is indefinite.

With respect to the rejection over the combination of the applied prior art of record, the applicants argue that "in contrast, in the present invention, the distribution of the metal is critical and produces unexpected results as shown in the previous-filed declaration under 37 C.F.R. 1.132. Okada further fails to teach or suggest the claimed percentages which have been shown to be critical. Since Okada explicitly states that concentrations are not critical, one of ordinary skill in the art would not have been motivated to provide the particular ranges cited in the present claims."

It is the Examiner's position that the claimed invention would have been found prima facie obvious over the combination of the applied prior art such as being provided in the rejection above and the Declaration previously submitted fails to obviate the prima facie case of obviousness rejection. It has been known in Okada et al to incorporate one or more metal complexes in the silver halide including the core or in the shell or through silver halide grain. It

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would have been obvious to the worker of ordinary skill in the art at the time the invention was made to incorporate the one or more metal complex taught therein in the silver halide grain with an expectation of achieving a predictable results, in this case increase the sensitivity of light sensitive material.

The Declaration under 37 CFR 1.132 on August 23, 2005 fails to obviate the prima facie case of obviousness rejection. First, the Declaration is based on Ikari et al which is irrelevant to the applied prior art shown above. Second, the Declaration is not commensurate with the scope of the claimed invention. The silver halide presented in the Declaration is based on the silver emulsion 14 of Akari et al wherein an amount of $K_4[Fe(CN)_6]$ with amount of 1×10^{-4} mole/mole of Ag is used, and the amount of iridium and the metal other than the iridium used is relative to this amount. The invention as being claimed is related to the percentage of an unspecified total amount of iridium and the metal other than iridium compound which encompasses any amount outside the amount disclosed in Ikari et al. It cannot not be conclude whether any amount of metal would provide same results such as being presented in the Declaration since the Declaration fails to show that the results are independent from the amount of the metal, but the percentage thereof in the core and in shell. Moreover, the applicants fails to explain why one of ordinary skill in the art would have extrapolate the results provided in the Declaration to any total amount of metal to encompass any amount within the scope of the claimed invention. "Thus, it is not apparent and applicants have not explained why one of ordinary skill in the art would have extrapolated the results obtained to plethora of combination encompassed by the claimed invention. *In re Susi*, 440 F.2d 442, 169 USPQ 423 (CCPA 1971).

Conclusion

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10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thorl Chea whose telephone number is (571) 272-1328. The examiner can normally be reached on 9 AM-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia H. Kelly can be reached on (571)272-1526. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Tchea *tch*
2007-11-23

Thori Chea
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